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| 23552 | 7590 | 10/24/2005 | EXAMINER | |
| MERCHANT & GOULD PC | | | ANGEBRANNDT, MARTIN J | |
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1756

DATE MAILED: 10/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/823,487

Applicant(s)

KOJIMA ET AL.

Examiner

Martin J. Angebrannt

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 27-40 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 27-40 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☒ Certified copies of the priority documents have been received in Application No. 09/903,285.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 4/12/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(c) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 27-36 and 38-39 are rejected under 35 U.S.C. 102(b) as being fully anticipated by Ohno et al. '783.

Examples 12 replaces a portion of the Sn in the SnSb_2Te_4 used in example 11 with Ge and forming a series of 10 2 nm thick layers interleaved with ZnS layers 2 nm in thickness.

4. Claims 27,30-32,35 and 38 are rejected under 35 U.S.C. 102(a) as being fully anticipated by Yamada et al. WO 00/54982.

Examples 11 and 12 use $[(\text{Ge}+\text{Sn})_4\text{Sb}_2\text{Te}_7]_{(100-y)}\text{Cr}_y$ or $[(\text{Ge}+\text{Sn})_4\text{Sb}_2\text{Te}_7]_{(100-y)}\text{Ag}_y$ coated to thicknesses of 9 nm. Pages 34-35.

5. Claims 27,30-32,35,37,38 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mizuuchi et al. EP 1096484.

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Example 12 uses GeSnSbTe coated to thicknesses of 10 nm and evaluates the recording layer using a laser wavelengths of 400 and 430 nm. The recording layer thickness is optimally 6 nm. [0088].

It would have been obvious to modify the cited examples by using the optimal thickness.

6. Claims 27,29-32,35 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakakuki et al. EP 1096485.

Example 6 uses GeSnSbTe coated to thicknesses of 10 nm and evaluates the recording layer using a laser wavelengths of 660 nm (table 1). The recording layer thickness is optimally 7-17 nm. [0040].

It would have been obvious to modify the cited examples by using other optimal thicknesses such as 7-9 nm with a reasonable expectation of forming a useful optical recording medium.

7. Claims 27,29-32,35 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakakuki '771.

Example 6 uses GeSnSbTe coated to thicknesses of 10 nm and evaluates the recording layer using a laser wavelengths of 660 nm (table 1). The recording layer thickness is optimally 7-17 nm. (col. 7/line 24).

It would have been obvious to modify the cited examples by using other optimal thicknesses such as 7-9 nm with a reasonable expectation of forming a useful optical recording medium.

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8. Claims 27-40 are rejected under 35 U.S.C. 102(a) as being fully anticipated by Akiyama et al. "Rewritable Dual layer phase change optical disk using blue-violet laser", Jap. J. Appl. Phys. Vol. 40(3B) pp. 1598-1603 (03/2001).

See figure 1 and accompanying text, where the recording layer is 6 nm thick and a 405 nm laser is used.

9. Claims 27-40 are rejected under 35 U.S.C. 102(a) as being fully anticipated by Kojima et al Presentation We-C-06 at ISOM2000 (09/2000) as cited in Akiyama et al. "Rewritable Dual layer phase change optical disk using blue-violet laser", Jap. J. Appl. Phys. Vol. 40(3B) pp. 1598-1603 (03/2001) and www.isom.jp/about/atopr.htm.

www.isom.jp/about/atopr.htm on the fourth page of five discusses the results of the conference being published in special issues of the Japanese Journal of Applied Physics.

The examiner adopts the position that the paper cites corresponds to the presentation We-C-06 at ISOM2000 as this is a special issue of Jap. J. Appl. Phys. Published shortly after the conference. The applicant may wish to provide materials used in the presentation We-C-06 and/or the abstract of the presentation to clarify the record.

10. Claims 27-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yasuda et al. '788, in view of Coombs et al. "Laser induced crystallization phenomena in GeTe based alloys II. Composition dependence of nucleation and growth", J. Appl. Phys. 78(8) pp. 4918-4828 (10/1995).

Yasuda et al. '788 in example 1 a multilayered optical recording medium with two recording media adhered face to face. The GeTeSb recording layer thicknesses are 14 nm and the media are used with a 400 nm laser. (27/60-28/54). Recording layer thicknesses of as little as

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5 nm can be used. (18/33-35). The use of GeTeSb based recording materials and the use of Sn in the recording layer is disclosed. (12/25-50)

Coombs et al. "Laser induced crystallization phenomena in GeTe based alloys II., Composition dependence of nucleation and growth", J. Appl. Phys: 78(8) pp. 4918-4828 (10/1995) teaches that the replacement of a portion of the Ge with Sn resulting in improved nucleation time and crystal growth speed. (page 4922/right column).

It would have been obvious to one skilled in the art to modify example 1 of Yasuda et al. '788 by using a thinner recording layer such as 5-9 nm disclosed as useful in this optical recording medium structure and to add Sn in place of a portion of the Ge as taught by Combs et al. with a reasonable expectation of improving the nucleation and crystal growth speed.

11. Claims 27,30,31,32,35,37,38 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi JP 11-144315, in view of Coombs et al. "Laser induced crystallization phenomena in GeTe based alloys II., Composition dependence of nucleation and growth", J. Appl. Phys. 78(8) pp. 4918-4828 (10/1995).

Kobayashi JP 11-144315 (machine translation attached) teaches optimizing the thickness of GeTeSb recording layers for the wavelength used and the formula is thickness (Y) = $0.064(\lambda)$ -17 with a variance of 5%, which yields the thickness in nm. For 400 nm wavelength, the optimum thickness value calculated is 8.6 nm. Example 2, the use of $\text{Ge}_2\text{Sb}_2\text{Te}_5$ at a thickness of 10 nm is described for use of 410 nm. [0033-0038].

It would have been obvious to one skilled in the art to modify example 2 of Kobayashi JP 11-144315 by using a thinner recording layer such as 8.6 nm disclosed as useful in this optical

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recording medium structure for 400 nm and to add Sn in place of a portion of the Ge as taught by Combs et al. with a reasonable expectation of improving the nucleation and crystal growth speed.

12. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

13. Claims 27-40 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-26 of U.S. Patent No. 6,751,184. Although the conflicting claims are not identical, they are not patentably distinct from each other because the thickness of the recording layer and the composition appear in claim 9, the useful wavelengths appear in claim 5. Claims to the medium, the method of manufacture and the methods of use are present in the patent.

14. Claims 27-40 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-31 of U.S. Patent No. 6,794,006. Although the conflicting claims are not identical, they are not patentably distinct from each other because the thickness of the recording layer appears in claim 8, the composition appears in claim 3, the useful wavelengths appear in claim 28. Claims to the medium, the method of manufacture and the methods of use are present in the patent.

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15. Claims 27,31,32,35 and 38 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-28 of U.S. Patent No. 6,858,278. Although the conflicting claims are not identical, they are not patentably distinct from each other because the thickness of the recording layer and the composition appear in claims 13 and 11. Claims to the medium and the method of manufacture are present in the patent. The use claims are nominal methods of use for optical recording media.

16. Claims 27,31,32,35 and 38 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-18 of U.S. Patent No. 6,761,950. Although the conflicting claims are not identical, they are not patentably distinct from each other because the thickness of the recording layer and the composition appear in claims 8 and 9. Claims to the medium and the method of manufacture are present in the patent. The use claims are nominal methods of use for optical recording media.

17. Claim 27,31,35 and 38 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-10 of U.S. Patent No. 6,689,445. Although the conflicting claims are not identical, they are not patentably distinct from each other because the thickness of the recording layer and the composition appear in claims 1 and 9. Claims to the medium are present in the patent. The use claims are nominal methods of use for optical recording media.

18. Claims 27,31,35 and 38 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-14 of U.S. Patent No. 6,764,736. Although the conflicting claims are not identical, they are not patentably distinct from each other because the thickness of the recording layer and the composition appear in claims 6 and 9.

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Claims to the medium and the method of manufacture are present in the patent. The use claims are nominal methods of use for optical recording media.

19. Claims 27,31,32,35 and 38 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-15 of copending Application No. 10/7343711 (US 2004/0126533). Although the conflicting claims are not identical, they are not patentably distinct from each other because the thickness of the recording layer and the composition appear in claims 1 and 4. Claims to the medium and the method of manufacture are present in the patent. The use claims are nominal methods of use for optical recording media.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

20. Claims 27,30-32,35 and 38 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-20 of copending Application No. 11/104542 (US 2005/0175822). Although the conflicting claims are not identical, they are not patentably distinct from each other because the thickness of the recording layer and the composition appear in claims 7 and 19. Claims to the medium and the method of manufacture are present in the patent. The use claims are nominal methods of use for optical recording media.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

21. Claims 27,30-32,35,37 and 40 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-32 of

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compending Application No. 10/637919 (US 2004/0048030). Although the conflicting claims are not identical, they are not patentably distinct from each other because the thickness of the recording layer and the composition appear in claims 4 and 9. Claims to the medium and the method of manufacture are present in the patent. The use claims are nominal methods of use for optical recording media.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

22. Claims 27-40 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-20 of compending Application No. 10/399006 (US 2004/0105182). Although the conflicting claims are not identical, they are not patentably distinct from each other because the thickness of the recording layer and the composition appear in claims 15 and 12. Claims to the medium and the method of manufacture are present in the patent. The use claims are nominal methods of use for optical recording media which the wavelengths are recited in the claims for

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

23. Claims 27-40 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-32 of compending Application No. 10/637842 (US 2004/0047281). Although the conflicting claims are not identical, they are not patentably distinct from each other because the thickness of the recording layer and the composition appear in claims 23 and 26. Claims to the medium and the method of

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manufacture are present in the patent. The use claims are nominal methods of use for optical recording media which the wavelengths are recited in the claims for

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

24. Claims 27-40 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-32 of copending Application No. 10/637819 (US 2004/0048029). Although the conflicting claims are not identical, they are not patentably distinct from each other because the thickness of the recording layer and the composition appear in claims 23 and 26. Claims to the medium and the method of manufacture are present in the patent. The use claims are nominal methods of use for optical recording media which the wavelengths are recited in the claims for

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

25. Claims 27-40 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-32 of copending Application No. 10/667684 (US 2004/0058117). Although the conflicting claims are not identical, they are not patentably distinct from each other because the thickness of the recording layer and the composition appear in claims 4 and 9. Claims to the medium and the method of manufacture are present in the patent. The use claims are nominal methods of use for optical recording media which the wavelengths are recited in the claims for

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

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26. Claims 27-40 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-32 of copending Application No. 10/637952 (US 2004/0033442). Although the conflicting claims are not identical, they are not patentably distinct from each other because the thickness of the recording layer and the composition appear in claims 4 and 26. Claims to the medium and the method of manufacture are present in the patent. The use claims are nominal methods of use for optical recording media which the wavelengths are recited in the claims for

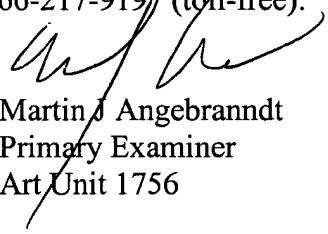
This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Martin J. Angebrannndt whose telephone number is 571-272-1378. The examiner can normally be reached on Monday-Thursday and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on 571-272-1385. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Martin J. Angebrannndt
Primary Examiner
Art Unit 1756

10/20/2005